



SOILS, AGRICULTURE, FRESHWATER AND TERRESTRIAL BIODIVERSITY SCREENING REPORT

**Motuoane Energy (Pty) Ltd Production
Right Project**

**Matjhabeng and Masilonyana Local
Municipalities, Lejweleputswa District
Municipality, Free State Province, South
Africa**

September 2025

CLIENT



Prepared by:

The Biodiversity Company

Cell: +27 81 319 1225

Fax: +27 86 527 1965

info@thebiodiversitycompany.com

www.thebiodiversitycompany.com

Table of Contents

	Introduction.....	5
	Background	5
	Specialist Details	7
	Scope of Work.....	8
1	Key Legislative Requirements.....	8
1.1	Methods.....	9
1.2	Desktop Assessment	9
2	Ecologically Important Landscape Features	9
3	Desktop Flora Assessment	11
3.1	Desktop Faunal Assessment	11
3.1.1	Terrestrial Site Ecological Importance	12
3.1.2	Wetland Assessment	14
3.1.3	Functional Assessment	14
3.2	Present Ecological Status	15
3.3	Importance and Sensitivity	15
3.3.1	Determining Buffer Requirements.....	15
3.3.2	Soil assessment	15
3.3.3	Desktop Assessment	15
3.3.4	Land Capability.....	16
3.4	Assumptions and Limitations	18


	Soil Impact Assessment.....	53
	Conclusion.....	55
	Terrestrial Ecology	55
	Avifauna	55
6.4	Freshwater Ecology	56
7	Land Capability/Soils.....	56
7.1		
7.2	References	57
7.3	Appendix Items.....	59
7.4	Appendix A – Specialist Declaration of Independence	59
8		
9	Appendix B – Specialist CVs.....	62
9.1		
9.2		

List of Figures

Figure 1-1	The location of the PAOI in relation to the nearby towns.....	6
Figure 1-2	Layout of the PAOI.....	6
Figure 4-1	Map illustrating the ecosystem threat status associated with the PAOI	20
Figure 4-2	Map illustrating the ecosystem protection level associated with the PAOI.	21
Figure 4-3	Map illustrating the PAOI in relation to the provincial conservation plan	22
Figure 4-4	Map illustrating the PAOI in relation to the SAPAD areas	23
Figure 4-5	The PAOI in relation to the NPAES dataset.....	24
Figure 4-6	Map illustrating ecosystem threat status of rivers and wetlands in the PAOI	25
Figure 4-7	The PAOI in relation to the National Freshwater Ecosystem Priority Areas	26
Figure 4-8	The PAOI in relation to the Mining Biodiversity Guidelines dataset.....	26
Figure 4-9	The PAOI in relation to the strategic transmission corridors dataset.....	27
Figure 4-10	The PAOI in relation to the CAR dataset	28
Figure 4-11	The PAOI in relation to the CWAC dataset.....	29
Figure 4-12	The land type associated with the PAOI	30
Figure 4-13	Illustration of the Bd 20, Dc 12 and Dc 8 land type terrain units (Land Type Survey Staff, 1972 – 2006)	31
Figure 4-14	Vegetation types associated with the PAOI	32
Figure 5-		

Specialist Details

1.2

Report Name	SOILS, AGRICULTURE, FRESHWATER AND TERRESTRIAL BIODIVERSITY SCREENING REPORT	
Reference	Motuoane Energy (Pty) Ltd Production Right Project	
Submitted to		
Report Writer	Bruce de Kock (Cand. Nat. Sci. 145121)	<i>de Kock</i>
Report Writer	Maletsatsi Mohapi (Cand. Nat. Sci. 154557)	<i>Mohapi</i>
Report Writer	Byron Goris (Cert. Sci. Nat. 170720)	<i>Byron</i>
Reviewer	Namitha Singh (SACNASP Pr. Sci. Nat. 157927)	<i>Namitha Singh</i>
Declaration	<p>The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.</p>	

VI	L4	L4	L5	L5	L5	L6	L6	L7
VII	L5	L5	L6	L6	L7	L7	L7	L8
VIII	L6	L6	L7	L7	L8	L8	L8	L8

Table 3-12 The Land Potential Classes

Land potential	Description of land potential class
L1	Very high potential: No limitations. Appropriate contour protection must be implemented and inspected.
L2	High potential: Very infrequent and/or minor limitations due to soil, slope, temperatures, or rainfall. Appropriate contour protection must be implemented and inspected.
L3	Good potential: Infrequent and/or moderate limitations due to soil, slope, temperatures, or rainfall. Appropriate contour protection must be implemented and inspected.
L4	Moderate potential: Moderately regular and/or severe to moderate limitations due to soil, slope, temperatures, or rainfall. Appropriate permission is required before ploughing virgin land.
L5	Restricted potential: Regular and/or severe to moderate limitations due to soil, slope, temperatures, or rainfall.
L6	Very restricted potential: Regular and/or severe limitations due to soil, slope, temperatures, or rainfall. Non-arable
L7	Low potential: Severe limitations due to soil, slope, temperatures, or rainfall. Non-arable
L8	Very low potential: Very severe limitations due to soil, slope, temperatures, or rainfall. Non-arable

The land capability of the proposed footprint will be compared to the National Land Capability which was refined in 2014- 2016. The National Land Capability methodology is based on a spatial evaluation modelling approach and a raster spatial data layer consisting of fifteen (15) land capability evaluation values (Table 3-13), usable

Assumptions and Limitations

The following assumptions and limitations are applicable for this assessment:

- The assessment area was based on the area provided by the client and any alterations to the footprint and/or missing GIS information pertaining to the assessment area would have affected the area surveyed;
- 3.5 • The species likelihood of occurrence is based on desktop information;
- The impact description included is preliminary and is solely based on the screening survey and desktop information; and
- All datasets accessed and utilised for this assessment are considered to be representative of the most recent and suitable data for the intended purposes.

